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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/649,382

Applicant(s)

JOJIC ET AL.

Examiner

DAVID P. RASHID

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7, 14 and 18-27 is/are rejected.
7) ☒ Claim(s) 8-13, 15-17 and 28-32 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

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Amendments & Claim Status

[1] This office action is responsive to Amendment received Mar. 3, 2009. Claims 1-32 remain pending.

Claim Rejections - 35 U.S.C. § 112

[2] In response to Amendment at 2 and 5, the previous § 112 rejection are withdrawn.

Claim Rejections - 35 U.S.C. § 101

[3] In response to Amendment at 2 and 5, the previous § 101 rejections are withdrawn.

Response to Arguments

Remarks Unpersuasive regarding Rejections Under 35 U.S.C. § 102(b)

[4] Amendment at 10-14 regarding 35 U.S.C. § 102 rejections with respect to claims 1-3, 5-6, 14, 18-19, and 23-24 have been respectfully and fully considered, but are not found persuasive.

Granted, as to Claim 1, the Office Action states that providing an image sequence of at least one image frame is taught in FIG. 2, element 201 and FIG. 3, elements 301-308. But FIG. 3 refers to training images for training the Foote system shown in FIG. 2, not an image frame of element 201. Additionally, the Office Action states that providing a preferred number of classes of objects is

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taught as a "pre- defined set of classes" in Col. 5, lines 14-16 to be identified within the image sequence. But a "predefined set of classes" is not the same as a preferred number of classes, as the applicants claims. In the applicants' claimed invention it is not necessary to define what type of a class is sought, all that is needed is the preferred number of classes sought, which requires much less information to specify than a class itself.

Amendment at 12-13.

To better define the rejection of showing the input video frames containing at least one image frame of a scene, the Examiner has replaced the training set reference with 6:17-19.

However though not *ad verbum*, a "predefined set of classes" is equivalent to providing "a preferred number of classes". To predefine a set of classes, it must both be (i) a number associated with the amount of classes; and (ii) preferred if they were originally predefined (as opposed to random).

The Examiner suggests that if it is intended to reduce information by providing only a numerical value (as opposed to "only a preferred number" which is broad enough to allow Examiner's interpretation) to further define in the claim (e.g., "providing only a numerical value representing a preferred number of classes of objects. . .") if supported in the original disclosure. This argument is relevant to claim 23. Amendment at 13-14.

Furthermore, Claim 1 includes the limitation of automatically decomposing the image sequence into the preferred number of classes of objects, processing *data* and learning *generative* models at substantially the same rate the input *data* is received. Cited Column 5, lines 14-16, does not teach automatically decomposing the image sequence into the preferred number of classes of objects in near real-time by processing *data* and learning generative models at substantially the *same rate* the input *data* is received. Nothing at all is stated in this paragraph regarding processing in near real-time. In fact, as stated by the Examiner, Foote does not teach automatically decomposing the image sequence into the preferred number of classes of objects in near real-time processing data and learning generative models at substantially the same rate the input data is received) *because* Foote segments a full video into individual presentations based on the extent of each presenter's speech. (Abstract) Hence, Foote can only segment a video file with corresponding audio *after* it has been recorded, not as the data is being acquired or input.

Amendment at 13.

However, claim 1 cites "processing the provided image sequence and computing the single set of model parameters at a same rate that the image sequence is provided". This has been interpreted that the processing, computing, and providing of the image sequence is at a same "rate" by definition.

“Rate”, by definition, is defined as “a fixed ratio between two things” and “a quantity, amount, or degree of something measured per unit of something else”. “Rate.” Def. 3a. n. and Def. 4a. n. Merriam-Webster Dictionary. 11th ed. 2009 (available at <http://www.merriam-webster.com/dictionary/rate>[2]).

If rate is to be interpreted as above, performing the function itself (i.e., completing the computation, processing, and providing) per image sequence is a “rate”. In addition, a rate may also be performing the function for the image sequence per computer (which is one computer for all functions). The processing, computing, and providing are equal in this rate because they are all performed on one computer per entire image sequence.

The Examiner suggests (1) further limiting what is meant by “rate”, such as e.g., “...computing the single set of model parameters at a substantially same time ~~a same rate~~ that the image sequence is provided” or (2) removing and positively reciting that all functions are performed at the same time “...computing the single set of model parameters ~~at a same rate that the image sequence is provided~~ while providing the image sequence” if supported in the original disclosure. This argument is relevant to claim 23. Amendment at 13-14.

It does not teach automatically decomposing each image sequence into a generative model (e.g., a model of how the observed data could have been generated) with each generative model including a set of model parameters that represent at least one object class for each image sequence using an expectation-maximization analysis that employs a Viterbi analysis, wherein *each* generative model is computed at a same rate that the at least one image sequence is acquired.

Amendment at 13-14.

However, Foote et al. does teach a generative model as Applicant defines as a model of how the observed data could have been generated (if the observed data is generated by a model as in Foote et al. such as fig. 3, items 301-308 for example, then the model is generative). It is suggested to amend the claim to further define a generative model to further differentiate from the prior art of record.

Remarks Unpersuasive regarding Rejections Under 35 U.S.C. § 103(a)

[5] Amendment at 14-16 regarding 35 U.S.C. § 103(a) rejections with respect to claims 4, 7, and 27 have been respectfully and fully considered, but are not found persuasive. See above.

[6] Amendment at 16-18 regarding 35 U.S.C. § 103(a) rejections with respect to claims 8-10, 13, 15-17, and 28-31 have been respectfully and fully considered, but are not found persuasive. See above.

[7] Amendment at 18-19 regarding 35 U.S.C. § 103(a) rejections with respect to claims 11-12 have been respectfully and fully considered, but are not found persuasive. See above.

[8] Amendment at 19-20 regarding 35 U.S.C. § 103(a) rejections with respect to claims 20-21 and 25-26 have been respectfully and fully considered, but are not found persuasive. See above.

[9] Amendment at 20-22 regarding 35 U.S.C. § 103(a) rejections with respect to claim 32 have been respectfully and fully considered, but are not found persuasive. See above.

Claim Rejections - 35 U.S.C. § 102

[10] The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Foote et al.

[11] **Claims 1-3, 5-6, 14, 18-19, and 23-24** are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,404,925 (issued Jun. 11, 2002, hereinafter “Foote et al.”).

Regarding **claim 1**, *Foote et al.* discloses a system (fig. 1; fig. 2) for automatically decomposing an image sequence (fig. 2, item 201), comprising a computer-readable storage medium (fig. 1, items 103, 107-108) storing a program that when executed (fig. 1, items 102, 109) causes:

a computer (fig. 1) to perform the following process actions,
providing an image sequence (fig. 2, item 201) of at least one image frame (6:17-19) of a scene (e.g., scene in fig. 3);

providing only a preferred number of classes of objects (fig. 2, items 202-205; "pre-defined set of classes" in 5:14-16; "Examples of video classes include close-ups of people, crowd scenes, and shots of presentation material. . ." at 5:16-20; "[s]hot [c]ategory" of TABLE 1 at col. 12) to be identified (fig. 12, item 1204) within the image sequence;

automatically decomposing (fig. 2, item 208; fig. 12, items 1202-1203; the final outcome at fig. 25 of three classes G,A,B) the image sequence (fig. 2, item 201) into the preferred number of classes of objects ("segmenting. . .into a pre-defined set of classes" in 5:14-16; the "Training Data" and "Test Data" of TABLE 1 at col. 12),

using probabilistic inference (fig. 23; "hidden Markov model" to be used in the method for classifying a video according to the present invention. Each of the image classes G, A, and B, are modeled using Gaussian distributions" (emphasis added) at 16:49-55; computing posterior distribution of variables using the hidden Markov models; "[t]he similarity between a given frame and the query is computed during the Viterbi algorithm as the posterior probability of the query state or states" at 18:42-44) and learning ("learning of the actual data points" at 15:34) to compute a single set of model parameters (the single set of mean visual appearances and variances in the "Gaussian distributions" at 6:32-33) comprising a mean visual appearance and variance (e.g., "Gaussian distributions having different means and variances" at 7:59-60; fig. 4; i.e., the model parameters from the hidden Markov model comprise means and variances of each class) of each class (fig. 2, items 202-205; "pre-defined set of classes" in 5:14-16; "[e]xamples of video classes include close-ups of people, crowd scenes, and shots of presentation material. . ." at 5:16-20; "[s]hot [c]ategory" of TABLE 1 at col. 12) in the image sequence (fig. 2, item 201),

processing the provided image sequence and computing the single set of model parameters at a same rate (e.g., the rate of performing the functions for an entire sequence per computer; see Response to Arguments above) that the image sequence is provided.

In summary, the hidden Markov model of fig. 23 (probabilistic inference and learning) uses/computes Gaussian distributions (that compute a single set of model parameters comprising mean visual appearance and variance of each class in the image sequence). Doing this

automatically decomposes the image sequence into the preferred number of classes of objects shown in fig. 23, 25 (classes A,B,G). The processing, computing, and providing given above is done per image sequence, and hence all performed at a same rate.

Regarding **claim 2**, *Foote et al.* discloses the system of claim 1 wherein providing the preferred number of objects (“pre-defined set of classes” in 5:14-16) comprises specifying the preferred number of classes of objects via a user interface (a user interface is visual interface from which a user can interact with such as fig. 22; a pre-defined set of classes suggests that some sort of user interface must have been used to “define” the set of classes; “[t]he feature used for classification are general, so that users can define arbitrary class types” in 5:18-20).

Regarding **claim 3**, *Foote et al.* discloses the system of claim 1 wherein decomposing the image sequence (fig. 2, item 201) into the preferred number of objects (“segmenting...into a pre-defined set of classes” in 5:14-16) comprises automatically learning a 2-dimensional model (fig. 3, items 310-322) of each object class (7:13-15).

Regarding **claim 5**, *Foote et al.* discloses the system of claim 1 wherein automatically decomposing the image sequence (fig. 2, item 201) into the preferred number of object classes (“pre-defined set of classes” in 5:14-16) comprises performing an inferential probabilistic analysis (fig. 2, items 202-205; “Gaussian distributions” in 5, line 65-6, line 2) of each image frame for identifying (“segmenting...into a pre-defined set of classes” in 5:14-16) the preferred number of object class appearances within the image sequence.

Regarding **claim 6**, *Foote et al.* discloses the system of claim 5 wherein performing an inferential probabilistic analysis of each image frame comprises performing a variational generalized expectation-maximization analysis (21:55-62) of each image frame (6:17-19) of the image sequence (fig. 2, item 201), wherein the expectation-maximization analysis employs a Viterbi algorithm (6:43-45; 16:40-42) in a process of filling in values of hidden variables (21:55-62; variables in fig. 4) in a model describing the object class.

Regarding **claim 14**, *Foote et al.* discloses the system of claim 1 wherein automatically decomposing the image sequence into the preferred number of object classes comprises performing a probabilistic variational expectation-maximization analysis (21:55-62).

Regarding **claim 18**, *Foote et al.* discloses the system of claim 1 further comprising a generative model (“hidden Markov model” in 18:35-42) which includes a set of model

parameters ("alignment" in 18:35-42) that represent the entire image sequence ("entire video" in 18, line 37).

Regarding **claim 19**, *Foote et al.* discloses the system of claim 1 further comprising a generative model which includes a set of model parameters that represent the images of the image sequence processed to that point (21:4-15).

Regarding **claim 22**, *Foote et al.* discloses the system of claim 19 further comprising automatically reconstructing a representation of the image sequence from the generative model, wherein the representation comprises the preferred number of object classes (fig. 2, item 207).

Regarding **claim 23**, *Foote et al.* discloses a computer-implemented process (fig. 1; fig. 2) for automatically generating a representation of an object (e.g., "crowd" at TABLE 1, Col. 12) in at least one image sequence (fig. 2, item 201), comprising using a computer-readable storage medium (fig. 1, items 103, 107-108) storing a program that when causes a computer (fig. 1) to:

acquire at least one image sequence (fig. 2, item 201), each image sequence having at least one image frame (6:17-19);

automatically decompose each image sequence (fig. 2, item 201) into a generative model (fig. 2, items 202-205; "Gaussian distributions" in 5, line 65-6, line 2), with each generative model comprising a set of model parameters (the single set of mean visual appearances and variances in the "Gaussian distributions" at 6:32-33) comprising the mean visual appearance and variance (e.g., "Gaussian distributions having different means and variances" at 7:59-60; fig. 4; i.e., the model parameters from the hidden Markov model comprise means and variances of each class) of each class (fig. 2, items 202-205; "pre-defined set of classes" in 5:14-16; "[e]xamples of video classes include close-ups of people, crowd scenes, and shots of presentation material. . ." at 5:16-20; "[s]hot [c]ategory" of TABLE 1 at col. 12) in the image sequence (fig. 2, item 201) being decomposed using an expectation-maximization analysis (fig. 23; "hidden Markov model to be used in the method for classifying a video according to the present invention. Each of the image classes G, A, and B, are modeled using Gaussian distributions" (emphasis added) at 16:49-55; computing posterior distribution of variables using the hidden Markov models; "[t]he similarity between a given frame and the query is computed during the Viterbi algorithm as the posterior probability of the query state or states" at 18:42-44) that employs a Viterbi analysis

(6:43-45; 16:40-42), wherein each generative model is computed at a same rate (e.g., the rate of performing the functions for an entire sequence per computer; see Response to Arguments above) that the at least one image sequence is acquired.

Regarding **claim 24**, claim 2 recites identical features as in claim 24. Thus, references/arguments equivalent to those presented above for claim 2 are equally applicable to claim 24.

Claim Rejections - 35 U.S.C. § 103

[10] The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Foote et al. in view of Petrovic et al.

[11] **Claims 4, 7, and 27** are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Foote et al.* in view of Transformed Hidden Markov Models: Estimating Mixture Models of Images and Inferring Spatial Transformations in Video Sequences, Computer Visions and Pattern Recognition, 2000, Vol. 2, pg 26 – 33 (hereinafter “Petrovic et. al”).

Regarding **claim 4**, while *Foote et al.* discloses the system of claim 3, *Foote et al.* does not directly suggest wherein the model employs a latent image and a translation variable in learning each object class.

Petrovic et al. discloses transformed hidden markov model wherein the model employs a latent image (“latent image”, pg 27-28) and a translation variable (“set of transformations...”, pg 27, right column) in learning each object class.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the model of *Foote et al.* to employ a latent image and a translation variable in learning each object class as taught by *Petrovic et al.* to “develop a general video analysis tool that extracts long and short term similarities in video using a novel generative model, called the transformed hidden Markov model (THMM).”, *Petrovic et al.*, pg 26 and to “learn models of

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different types of object from unlabeled frames in a video sequence that include background clutter, occlusion and spatial transformations, such as translation, rotation and shearing.”, *Petrovic et al.*, pg. 26.

Regarding **claim 7**, while *Foote et al.* discloses the system of claim 3, *Foote et al.* does not directly suggest wherein the model describing the object class employs a latent image and a translation variable in filling in said hidden variables.

Petrovic et al. discloses transformed hidden markov model wherein the model describing the object class employs a latent image (“latent image”, pg 27-28) and a translation variable (“set of transformations...”, pg 27, right column) in filling in hidden variables (pg 29).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the model of *Foote et al.* to employ a latent image and a translation variable in filling in hidden variables as taught by *Petrovic et al.* to “develop a general video analysis tool that extracts long and short term similarities in video using a novel generative model, called the transformed hidden Markov model (THMM).”, *Petrovic et al.*, pg 26 and to “learn models of different types of object from unlabeled frames in a video sequence that include background clutter, occlusion and spatial transformations, such as translation, rotation and shearing.”, *Petrovic et al.*, pg. 26.

Regarding **claim 27**, claim 4 recites identical features as in claim 27. Thus, references/arguments equivalent to those presented above for claim 4 are equally applicable to claim 27.

Foote et al. in view of Jojic et al.

[12] **Claims 20-21 and 25-26** are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Foote et al.* in view of Learning Flexible Sprites in Video Layers, Proc. of IEEE Conf. on Computer Vision and Pattern Recognition, 2001, pg 1-8 (hereinafter “Jojic et al.”).

Regarding **claim 20**, while *Foote et al.* discloses the system of 19, *Foote et al.* does not teach wherein the model parameters include: a prior probability of at least one object class; and means and variances of object appearance maps.

Jojic et al. teaches a learning flexible sprites in video layers wherein the model parameters include:

a prior probability of at least one object class (“prior probability $p(c)$ of spring class c ”, pg 3); and means and variances of object appearance maps (“means and variances of the sprite appearance maps”, pg 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for system of *Foote et al.* to include wherein the model parameters include: a prior probability of at least one object class; and means and variances of object appearance maps as taught by *Jojic et al.* to “focus on learning the appearances of multiple objects in multiple layers, over the entire video sequence.”, *Jojic et al.*, pg 1 and to provide “probabilistic 2- dimensional appearance maps and masks of moving, occluding objects.”, *Jojic et al.*, pg 1.

Regarding **claim 21**, while *Foote et al.* in view of *Jojic et al.* discloses the system of 20, *Foote et al.* in view of *Jojic et al.* do not teach wherein the model further comprises observation noise variances.

Jojic et al. teaches a learning flexible sprites in video layers wherein the model parameters include observation noise variances “the observation noise variances β ”, pg 3.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for system of *Foote et al.* to include wherein the model further comprises observation noise variances as taught by *Jojic et al.* to “focus on learning the appearances of multiple objects in multiple layers, over the entire video sequence.”, *Jojic et al.*, pg 1 and to provide “probabilistic 2- dimensional appearance maps and masks of moving, occluding objects.”, *Jojic et al.*, pg 1.

Regarding **claims 25 and 26**, while *Foote et al.* discloses the computer-implemented process of claim 23, *Foote et al.* does not teach wherein the model parameters of each generative model includes

- (i) an object class appearance map,
- (ii) a prior probability of at least one object class, and
- (iii) means and variances of that object class appearance map.

Jojic et al. teaches a learning flexible sprites in video layers wherein the model parameters includes (i) an object class appearance map, (ii) a prior probability of at least one

object class, and (iii) means and variances of that object class appearance map (Section 5, “Interference and Learning”, first paragraph, pg 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for each generative model of *Footo et al.* to include (i) an object class appearance map, (ii) a prior probability of at least one object class, and (iii) means and variances of that object class appearance map as taught by *Jojic et al.* to “focus on learning the appearances of multiple objects in multiple layers, over the entire video sequence.”, *Jojic et al.*, pg 1 and to provide “probabilistic 2- dimensional appearance maps and masks of moving, occluding objects.”, *Jojic et al.*, pg 1.

Allowable Subject Matter

[12] **Claims 8-13, 15-17, and 28-32** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

[13] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

[14] Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578

and fax number (571)270-2578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

/Bhavesh M Mehta/
Supervisory Patent Examiner, Art Unit 2624

David P Rashid
Examiner
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